Chapter 39
A Virtual Learning Process Environment and Comparison with Conventional E-Learning Systems

Ayodeji Adesina
Dublin City University, Ireland

Derek Molloy
Dublin City University, Ireland

ABSTRACT

Learning is a complex process; an in-depth knowledge of the intricacies of learning processes can help to improve the formulations of effective methods, tools, and technologies to support and enhance learning through the effective management of learning processes. VLEs such as Moodle help facilitate the management of educational courses for students, in particular by helping lecturers and students with course administration. However, the management of the process of learning is inadequate. Once educational course materials are made available on the VLEs, analyses such as what students do with the course materials are difficult to observe in a real-time manner. Therefore, there is a need for the administration and management of the process of learning. This chapter presents a Virtual Learning Process Environment (VLPE) that is based on the Business Process Management (BPM) technology conceptual framework. In contrast to traditional e-learning systems, VLPE focuses on learning process management through the orchestration of flexible education pedagogies around course materials in the form of learning process workflows. Consequently, the effectiveness of any adopted pedagogy can be re-assessed, re-evaluated, and reformed by course designers with the potential to improve course design and learning outcomes.

INTRODUCTION

Thanks to the advances in ICT, the significant impact of e-learning in the 21st century education system cannot be overemphasised. However, the future demand and sustainability of online education will be driven by continuous improvements to the existing methods, tools and technologies that would bring about educational value for all of the e-learning stakeholders – students, course designers, educational institutions, content providers, technology providers, accreditation bodies, employers etc. (Wagner et al. 2006). Within the literature, there are many different definitions of e-learning, each reflecting the different relationship that exists between education and technology. Some definitions recognise e-learning as the use of technology to conduct learning activities - the view of e-learning in such a context would be descriptive. Some recognise e-learning as the use of technology to improve the quality of a learning process. Other definitions recognise e-learning as the use of technology to both conduct learning activities and improve the quality of the learning process. In the report, "E-Learning in Tertiary Education" published by the Organisation for Economic Co-operation and Development (OECD), e-learning was referred to the use of technology to improve and/or support learning in Higher Education (Garrett 2005). While this reference is appropriate within the context of the report (tertiary education), a broader definition of e-learning regardless of the organisational or institutional context still varies.

Usluel and Mazman (2009) recognised e-learning both from the technical and educational side, with more emphasis on the educational value within the academic and non-academic domain. This recognition by Usluel and Mazman (2009) corroborates the view shared by Morrison and Khan (2003) and defined e-learning as:

An innovative approach for delivering electronically mediated, well-designed, student-directed and interactive learning environments for everyone, regardless of time and place, using either the Internet or digital technologies in collaboration by the principles of instructional design.

In spite of the numerous definitions of e-learning, these definitions, especially within the context of higher education, hardly make any reference to "pedagogy" even though the success of e-learning will ultimately hinge on how much educational pedagogy it can support (De Boer and Collis 2002). Perhaps this could be one of the geneses of many e-learning systems shortcomings. The general consensus here is that e-learning is: about learning and technology; and, knowledge acquisition through the use of ICT. Although, it is worth noting that e-learning and pedagogy are not the same. Nevertheless, an e-learning definition – from an academic point of view – that conveys the term "pedagogy" or its connotation could increase the significance of pedagogy itself in the minds of the e-learning vendors.

The context of e-learning research in this Chapter is based on a novel architecture for an adaptive and flexible e-learning system within third level (tertiary) education using enterprise business technologies to enhance learning and the management of learning processes through various pedagogies. In this regard, the definition of e-learning by Morrison and Khan (2003), if juxtaposed with some sort of pedagogical connotation, would be appropriate in the context of the system concept that is presented in this chapter.

E-learning can be defined as a technology-enabled pedagogy that facilitates an interactive learning environment for all teaching and learning stakeholders (students, tutor, course designer etc.) where a continuous means of knowledge improvement is possible. Although the educational value of any e-learning system is dependent on many factors, this definition is aimed to somewhat emphasise the importance of pedagogy and interaction within such a system. Therefore, within the presented definition, the key components of

Related Content

A Proposed Template for the Evaluation of Web Design Strategies
Dimitrios Xanthidis, David Nicholasand Paris Argyrides (2010). *Web Technologies: Concepts, Methodologies, Tools, and Applications (pp. 119-144).*
www.irma-international.org/chapter/proposed-template-evaluation-web-design/37628

Study on Blockchain-Integrated IoT: Reorientation With Amalgamation of Heterogenic Devices
Moumita Sarkar, Sandip Royand Rajesh Bose (2023). *Concepts, Technologies, Challenges, and the Future of Web 3 (pp. 337-373).*
www.irma-international.org/chapter/study-on-blockchain-integrated-iot/329869

Edubot: A Framework for Chatbot in Education
Rawad Hammad, Mohammed Bhajaand Jinal Patel (2023). *Trends, Applications, and Challenges of Chatbot Technology (pp. 166-185).*
www.irma-international.org/chapter/edubot/318388

An Unsupervised Approach for Determining Link Specifications
Khayra Bencherif, Mimoun Malkiand Djamel Amar Bensaber (2018). *International Journal of Information Technology and Web Engineering (pp. 104-123).*
www.irma-international.org/article/an-unsupervised-approach-for-determining-link-specifications/209723

A Framework Towards Semantic Web Service Composition Based on Multi-Agent System
Sandeep Kumarand R. B. Mishra (2008). *International Journal of Information Technology and Web Engineering (pp. 59-81).*
www.irma-international.org/article/framework-towards-semantic-web-service/2652